

1. Use algebra tiles to model each polynomial. Sketch the tiles.

a)  $-5 + y^2$       b)  $2x - 1$       c)  $-3a^2 - 2a + 1$       d)  $3z$       e)  $v^2 - 4v$

2. Simplify each polynomial.

a)  $7d - 2d + 1 - 6$       b)  $-5 - 3 - k - 5k$

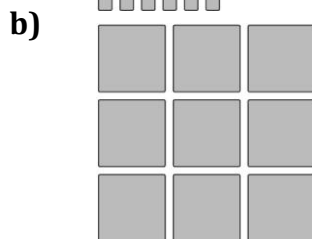
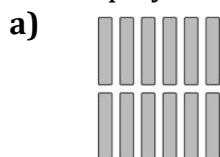
c)  $-4 + 2a + 7 - 4a$       d)  $3p - 6 - 4p + 6$

3. Simplify each polynomial.

a)  $3a^2 - 2a - 4 + 2a - 3a^2 + 5$       b)  $7z - z^2 + 3 + z^2 - 7$

c)  $d^2 + 3d + 1 + 4d^2 + 2$       d)  $-6x^2 + 10x - 4 + 4 - 12x - 7x^2$

4. Write a polynomial to represent the perimeter of each rectangle.



5. Use algebra tiles to model each sum. Sketch your tile model. Record your answer symbolically.

a)  $(-4h + 1) + (6h + 3)$

b)  $(2a^2 + a) + (-5a^2 + 3a)$

c)  $(3y^2 - 2y + 5) + (-y^2 + 6y + 3)$

d)  $(3 - 2y + y^2) + (-1 + y - 3y^2)$

6. Add.

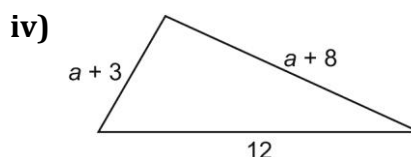
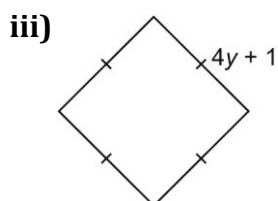
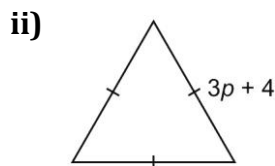
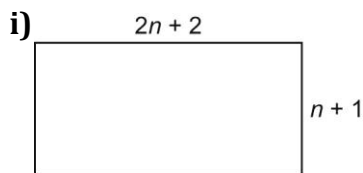
a)  $(y^2 + 6y - 5) + (-7y^2 + 2y - 2)$

b)  $(-2n + 2n^2 + 2) + (-1 - 7n^2 + n)$

c)  $(3m^2 + m) + (-10m^2 - m - 2)$

d)  $(-3d^2 + 2) + (-2 - 7d^2 + d)$

7. For each shape below, write the perimeter as a sum of polynomials and in simplest form.



8. Use algebra tiles. Sketch your tile model. Record your answer symbolically.

**a)**  $(4x + 2) - (2x + 1)$

**b)**  $(4x + 2) - (-2x + 1)$

**c)**  $(4x + 2) - (2x - 1)$

**d)**  $(4x + 2) - (-2x - 1)$

9. Use a personal strategy to subtract. Check your answers by adding.

**a)**  $(2x + 3) - (5x + 4)$

**b)**  $(4 - 8w) - (7w + 1)$

**c)**  $(x^2 + 2x - 4) - (4x^2 + 2x - 2)$

**d)**  $(-9z^2 - z - 2) - (3z^2 - z - 3)$

10. Subtract.

**a)**  $(mn - 5m - 7) - (-6n + 2m + 1)$

**b)**  $(2a + 3b - 3a^2 + b^2) - (-a^2 + 8b^2 + 3a - b)$

**c)**  $(xy - x - 5y + 4y^2) - (6y^2 + 9y - xy)$

11. Determine each product.

**a)**  $4(3a + 2)$

**b)**  $(d^2 + 2d)(-3)$

**c)**  $2(4c^2 - 2c + 3)$

**d)**  $(-2n^2 + n - 1)(6)$

**e)**  $-3(-5m^2 + 6m + 7)$

12. Determine each quotient.

**a)**  $(16v + 16) \div (8)$

**b)**  $(25k^2 - 15k) \div (5)$

**c)**  $(20 - 8n) \div (-4)$

**d)**  $(18x^2 - 6x + 6) \div (6)$

**e)**  $(7 - 7y + 14y^2) \div (-7)$